Remarks

Claims 1-14 are pending in this application. Claim 11 has been amended to include all of the limitations of claim 1. Applicants respectfully submit that the pending claims are allowable for at least the following reasons.

The Rejection of Claims 1-10 And 12-14 Under 35 U.S.C. § 103 Over Pham In View of Olah Should Be Withdrawn

On page 2 of the Office Action, claims 1-10 and 12-14 stand rejected over U.S. Patent No. 5,663,474 to Pham *et al.* ("Pham") in view of U.S. Patent No. 5,073,674 to Olah ("Olah").

It is well settled that the Patent Office bears the burden of establishing a *prima facie* case of obviousness under 35 U.S.C. § 103. *In re Deuel*, 51 F.3d 1552, 1557 (Fed. Cir. 1995); *In re Rijckaert*, 9 F.3d 1531, 1532 (Fed. Cir. 1993). To establish a *prima facie* case of obviousness, the Patent Office must first show that the prior art suggested to those of ordinary skill in the art that they should make the claimed composition or device or carry out the claimed process. Second, it must show that the prior art would have provided one of ordinary skill in the art with a reasonable expectation of success. Both the suggestion and the reasonable expectation of success must be adequately founded in the prior art and not in an applicant's disclosure. Third, the Patent Office must show that the prior art teaches or suggests all the claim limitations. *Manual of Patent Examination and Procedure* (MPEP) § 2143; *In re Vaeck*, 20 U.S.P.Q.2d 1438, 1442 (Fed. Cir. 1991). These criteria must be satisfied with factual and objective evidence found in the prior art: an examiner's conclusory statement cannot form a basis for a *prima facie* case of obviousness. *In re Sang-Su Lee*, 277 F.3d 1338, 1343-4 (Fed. Cir. 2002). Thus, when conducting an analysis under 35 U.S.C. § 103(a), an Examiner "must step backward in time and into the shoes worn by the hypothetical 'person of ordinary skill in the art' when the invention was unknown and just before it was made." MPEP §2142. This is important, as "impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art." *Id.* Consequently, when determining whether or not a claimed invention is obvious, one must cast his/her "mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field." *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999).

Applicants respectfully submit that none of these criteria are met by the combined teachings of Pham and Olah.

According to the Examiner, Pham discloses an alkylation process of aliphatic or aromatic hydrocarbons with an olefin in the presence of a solid polymeric hydrogen fluoride catalyst. Office Action at page 2. The Examiner admits that, while Pham does not disclose using a polyhydrogen fluoride catalyst, Olah does. *Id.* Without more, the Examiner then alleges that:

> it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the Pham process by using liquid onium polyhydrogen fluoride in the place of hydrogen fluoride of the Pham catalyst since it is expected that using polyhydrogen fluoride or hydrogen fluoride would yield similar results.

Office Action at page 3. Applicants respectfully disagree with the Examiner's allegation.

First, the Examiner has not pointed to anything in Pham that suggests to those of ordinary skill in the art to modify Pham by using Olah's liquid onium polyhydrogen fluoride complex to arrive at the claimed invention. Pham teaches the use of a "hydrogen fluoride-containing alkylation catalyst, comprising an effective amount of a carrier." Pham, column 1, lines 42-50. But, Pham teaches that the carrier "does not form a complex with the hydrogen fluoride." *Id.* at lines 53-55. Olah, in contrast, teaches liquid polyhydrogen fluoride complexes to effect alkylation reactions, where polyhydrogen fluoride is complexed to various amines. Olah, column 1, lines 61-64 and column 2, lines 34-36. It would seem, therefore, that Pham teaches away from using the claimed onium polyhydrogen fluoride complex, where the polyhydrogen fluoride is complexed. Thus, Pham would not have motivated someone with ordinary skill in the art to modify its teachings (*i.e.*, no complexation) by using Olah's polyhydrogen fluoride complex, where there is complexation.

For the same reason, the combination of Pham and Olah would not have provided those of ordinary skill in the art with any expectation of successfully obtaining the claimed invention. Without the support of factual and objective evidence found in the prior art, the Examiner's conclusory statement that it would have been obvious to modify Pham with Olah's polyhydrogen fluoride catalyst to arrive at the claimed invention cannot form a basis for a *prima facie* case of obviousness. *See In re Sang-Su Lee*, 277 F.3d 1338, 1343-4 (Fed. Cir. 2002).

Because Pham teaches away from the claimed invention, Applicants respectfully submit that the rejection of the claims over Pham and Olah is solely based on the use of impermissible hindsight and should be withdrawn.

The Rejection of Claim 11 Under 35 U.S.C. § 112 Should Be Withdrawn

On page 3 of the Office Action, claim 11 stands rejected under 35 U.S.C. § 112, second paragraph. The Examiner offers that claim 11 would be allowable "if rewritten to . . . include all of the limitation of the base claim." Office Action at page 3. Applicants offer that the rejection of claim 11 under 35 U.S.C. § 112, second paragraph is overcome by the amendment to that claim and should be withdrawn.

No fee is believed due for this submission. Should any fees be due for this submission or to avoid abandonment of this application, please charge such fees to Jones Day Deposit Account No. 50-3013.

Respectfully submitted,

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